



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Devin M. Montgomery	Project Number 31680
Project Title Vines and Their Spines: Fact or Friction?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This project was designed to show the amount of friction, produced by different grades of sandpaper that is needed, for a vine's tendril to elongate and twine itself around the support. This project provides the basis for the most effective way to grow and maintain vines for gardeners, biologists and horticulturalists.</p> <p>Methods/Materials The growth of sweet pea tendrils around the stimulus was measured in complete turns around the support. There were five groups, each with 3 different plant samples and all with different grades of sandpaper: Group A (The control group with a smooth stimulus), Group B (grade 400), Group C (grade 220), Group D (grade 100), and Group E (grade 50). Over a period of 20 days, the number of complete turns on the supports in each group was recorded each day in the afternoon.</p> <p>Results The friction created between the support and tendril allowed the tendril to stay firmly entwined and not slip off. Once the tendrils fell off of the supports, due to rain, with finer grades of sandpaper, they did not have a backbone and could not grow upright.</p> <p>Conclusions/Discussion This experiment proves my hypothesis that the more the friction or the rougher the sandpaper, the more complete turns around the stimulus. To continue this project, the diameter of the supports could vary, testing if the angle at which the tendril curls makes a difference in the plant's growth. The weather in this project was not controlled, so to continue this project, I could grow the plants in a greenhouse.</p>	
Summary Statement This project determines whether friction increases the growth of a vine's tendril.	
Help Received My grandfather helped me obtain the necessary materials for my project.	